

9639

Diag. Cht. No. 9380

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey SHORELINE - PHOTOGRAMMETRIC

Field No. Ph-65(50) Office No. T-9639

LOCALITY

State TERRITORY OF ALASKA

General locality SEWARD PENINSULA

Locality IKPEK

1949

CHIEF OF PARTY

M.T. Paulson-Chief of Field Party.

C.W. Clark-Portland Photogrammetric Office

LIBRARY & ARCHIVES

DATE Feb 20 - 1953

B-1870-1 (1)

## DATA RECORD

T - 9639

Project No. (II): Ph-65(50)

Quadrangle Name (IV):

Field Office (II): Shishmaref, Alaska

Chief of Party: Marvin T. Paulson

Photogrammetric Office (III): Portland, Oregon

Officer-in-Charge: Charles W. Clark

Instructions dated (II) (III): 9 November 1950 (Office)  
 17 March 1949 (field) Ph-46(49) and  
 Ph-28(47)

Copy filed in Division of  
 Photogrammetry (IV)

Method of Compilation (III): Graphic

Manuscript Scale (III): 1:20,000

Stereoscopic Plotting Instrument Scale (III):

Scale Factor (III): None

Date received in Washington Office (IV): JUN 13 1951 Date reported to Nautical Chart Branch (IV): JUN 29 1951

Applied to Chart No.

Date:

Date registered (IV): Aug 8, 1952

Publication Scale (IV): 1:20,000

Publication date (IV):

Date of issue - June 1952

Geographic Datum (III): N.A. 1927

Vertical Datum (III): ~~Mean Sea Level~~~~Mean sea level except as follows:~~

Elevations shown as (25) refer to mean high water  
 Elevations shown as (5) refer to sounding datum  
 i.e., mean low water or mean lower low water

Reference Station (III):

NULUK, 1949

The difference between Unadjusted Datum  
 and N.A. 1927 Datum is Lat. plus/minus 1.4 m.  
 and Long. ~~plus~~/minus 0.9 m. G.B.W. 9-54

Lat.:

Long.:

Adjusted

Unadjusted ☒

Plane Coordinates (IV):

State:

Alaska

Zone:

3

Y=

X=

Roman numerals indicate whether the item is to be entered by (II) Field Party, (III) Photogrammetric Office,  
 or (IV) Washington Office.

When entering names of personnel on this record give the surname and initials, not initials only.


Areas contoured by various personnel  
(Show name within area)  
(II) (III)

## DATA RECORD

Field Inspection by (II): **J. Andrew Hinely** Date: **6/22/49 to 9/22/49**  
 Ship "PIONEER" (Topographic Surveys) ~~Season 1950~~

Planetable contouring by (II): Date:

Completion Surveys by (II): **None** Date:

Mean High Water Location (III) (State date and method of location): **Spot located on field photographs during 1949 field season and spot located by Ship "PIONEER" on topographic surveys by planetable during 1950 season.**

Projection and Grids ruled by (IV): Date:

Projection and Grids checked by (IV): Date:

Control plotted by (III): **James L. Harris** Date: **3/6/51**

Control checked by (III): **H.J. Atkins** Date: **3/7/51**

Radial Plot or Stereoscopic **James L. Harris & J.E. Deal** Date: **3/21/51**  
 Control extension by (III):

Planimetry Date:  
 Stereoscopic Instrument compilation (III):

Contours Date:

Manuscript delineated by (III): **Ree H. Barron** Date: **3/27/51**

Photogrammetric Office Review by (III): **J.E. Deal** Date: **5/31/51**

Elevations on Manuscript Date:  
 checked by (II) (III):

Camera (kind or source) (III): U.S.C. & G.S., 9-lens, focal length 8.25 inches.

## PHOTOGRAPHS (III)

Number	Date	Time	Scale	Stage of Tide
27976 thru 27982	7/31/50	11:37 to 11:48 (150° W)	1:20,000	1.5 ft. above M.L.L.W.

NOTE: Tide information is very meager for this area and stage of tide is only an approximation.

## Tide (III)

Reference Station: Dutch Harbor, Alaska  
Subordinate Station: Port Clarence, Cape Riley, Alaska  
Subordinate Station:

Ratio of Ranges	Mean Range	Diurnal
		Range
	2.2	3.7
	1.2	1.4

Washington Office Review by (IV):

L. Martin Gazik

Date: 9-10-51

Final Drafting by (IV):

Date:

Drafting verified for reproduction by (IV):

Date:

Proof Edit by (IV):

L. Martin Gazik

Date: 5-16-52

Land Area (Sq. Statute Miles) (III): 8.9

Shoreline (More than 200 meters to opposite shore) (III): 26.5 statute miles

Shoreline (Less than 200 meters to opposite shore) (III): 0.5 statute miles

Control Leveling - Miles (II):

Number of Triangulation Stations searched for (II): 4

Recovered: 4

Identified: 4

Number of BMs searched for (II):

Recovered:

Identified:

Number of Recoverable Photo Stations established (III): 2

Number of Temporary Photo Hydro Stations established (III): None

Remarks: (X) U.S.C. & G.S. camera, single-lens, focal length - 6 inches

0-82	8-22-48	13:17 to 13:44	1:59,000	} Field inspection and control identification notes.
-83	"	"	"	
-84	"	"	"	
-85	"	"	"	

#### SUMMARY FOR T-9639

This series of 16 planimetric maps at 1:20,000 scale of project Ph-65(50) covers the coastline of the SEWARD PENINSULA from CAPE DOUGLAS northward around CAPE PRINCE OF WALES to the IKPEK LAGOON at the 66° parallel.

The planimetric survey for NOME is on the southern side of the peninsula and does not adjoin the other maps in this project.

Much of this coastal area has not been previously covered by maps at this large scale.

Information concerning the project in its broader aspects will be included in a project completion report to be compiled at the conclusion of the review of all surveys in this project and will be filed in the Bureau Archives.



FIELD INSPECTION REPORT  
Map Manuscript No. T-9639  
Project Ph-65(50)

Refer to "Project Report Aerial Photograph Control and Inspection, North Shore Seward Peninsula, Alaska Ph-46(49), Marvin T. Paulson, Chief of Party."

Refer to Descriptive Reports for Topographic Surveys PI-B, C, and D-50(1950), Thos. B. Reed CDR. USC&GS, Comdg. Ship PIONEER.

PHOTOGRAMMETRIC PLOT REPORT  
Map Manuscripts Nos. T-9639 to T-9645 Incl.  
Project Ph-65(50)

21: AREA COVERED:

The map manuscripts Nos. T-9639 to T-9645 incl., cover an area 8 to 10 miles wide along the shorelines of the Bering Sea and Chukchi Sea from a point about 8 miles southeast of Tin City, Alaska to a point about 9 miles northeast of the entrance to Ikpek Lagoon.

22: METHOD:

The radial plot was run by the usual hand templet method. The nine-lens photographs were supplemented by single lens ratio prints of Navy photography taken on the same day as the 9-lens photographs. Six map manuscripts of acetate material and one of an unusual heavy vinylite material, each ruled with a polyconic projection and a Universal Transverse Mercator grid system of 2500 meter squares, were used.

Base grid sheets were not used. The radial plot was run directly on the combined map manuscripts which were joined together with cellulose tape.

Master Calibration Templet No. 27380 for the nine lens photographs was used for paper distortion corrections and for the correction of transforming errors. Master Calibration Templet "Cartographic Camera "O" 2 time Enlargement" was used for paper distortion corrections of the ratio prints.

Templets of the photographs were made on sheets of .005" clear acetate.

The radial plot was run without any unusual difficulties. All identified horizontal control stations were held to except the substation for POTATO MOUNTAIN, 1944. See side heading 23: "Adequacy of Control" for additional facts.

The intersections of radials to photogrammetric points were excellent and it is believed that the results are well within the limits of accuracy required for the project.

The photogrammetric points and photograph centers were transferred to the map manuscripts by turning the combined radial plot, with templets attached, face down on the radial plot table and then drawing circles of the proper size, at the point of their locations determined by the radial plot.



There was an adequate number of horizontal control stations identified for use in controlling this radial plot except for the area southeast from Tin City, Alaska. For this area refer to a Special Report for Map Manuscript T-9646 Ph-65(50) which describes a tentative radial plot for a shoreline area along the Bering Sea between Longitude  $167^{\circ} 30'$  and Longitude  $167^{\circ} 56'$ .

The radial plot was extended northeasterly to include the triangulation stations DOUBLE and RIVER and it is believed that a strong junction has been established in that vicinity for any future work.

23: ADEQUACY OF CONTROL:

The sub-station for POTATO MOUNTAIN, 1944 is located at a high elevation and falls at the extreme limits of the outer chambers of the 1950 nine-lens photographs where the photographic detail is poor. The sub-station was identified in the field on a contact single lens photograph, Scale, 1:60,000 taken in 1948 on which the photograph detail is also poor and transfer by use of the stereoscope could not be made. By office examination of the photographs a point was selected along the ridge of Potato Mountain which is believed to be the location of the triangulation station and this point was held to the geographic position of POTATO MOUNTAIN, 1944. The ridge is practically radial on 2 photographs and this point held along with numerous other horizontal control points and with pass points located from the flight of photographs running along the shorelines which were well controlled.

24: SUPPLEMENTAL DATA:

Planetable Surveys made by the Ship "PIONEER" were available but since none of the points located by these surveys were identified on photographs no attempt was made to use this data in the radial plot. The planetable positions were plotted on the map manuscripts.

25: PHOTOGRAPHY:

The nine-lens photography was insufficient because the side lap of the inshore flight did not cover the shoreline along the Chukchi Sea. There was no inshore flight along the shoreline of the Bering Sea. This condition resulted in numerous photogrammetric points having intersections of radials of insufficient angles to obtain an accurate geographic location. To eliminate this condition an attempt was made to use the single lens army reductions ( $4\frac{1}{2}'' \times 4\frac{1}{2}''$ ) but results were not very satisfactory.

Captain O.S. Reading was informed of this condition when he visited the Portland Office in March 1951 and subsequently single

-3-

lens ratio prints made from Navy photography taken on 31 July 1950 were furnished to this office to supplement the 9-lens photographs where needed. When these were included in the radial plot adequate intersections of radials to all points were obtained.

Approved:

*Charles W. Clark*  
Charles W. Clark  
Officer-in-Charge

Respectfully submitted:

*J. Edward Deal, Jr.*  
J. Edward Deal, Jr.  
Cartographer



- Area crosshatched is referred to in the Compilation Report as being considered of sub-normal accuracy.

PH-65 (50)

COMPILATION REPORT  
Map Manuscript No. T-9639  
Project Ph-65(50)

31: DELINEATION:

Graphic methods were used for the compilation of this map manuscript.

The field inspection was done on single-lens contact prints taken in 1948, Scale 1:60,000. It consisted of spot locations of the mean high-water line and numerous notes to aid the compiler in the interpretation of photographic details. In addition there was available a planetable survey by the Ship PIONEER of a part of the area which furnished spot planetable locations of the mean high-water line only.

The compilation work was at first limited to the location of the mean high-water lines and recoverable topographic stations. When this work was complete the map manuscripts were forwarded to the Washington Office so that reproductions could be made. Upon return of the map manuscripts to the Portland Office the interior details were compiled.

All planimetric details have been shown to the extent of the limits of detailing indicated on the index for Project Ph-65(50).

32: CONTROL:

The horizontal control stations were well identified and the placement and density were satisfactory. Refer to side headings 22 and 23 of the Photogrammetric Plot Report which is included in this descriptive report for additional facts.

33: SUPPLEMENTAL DATA:

Topographic Survey PI-B-50, Scale 1:20,000 dated 8-7-50 was used to supplement the photographs when delineating the mean high-water line.

34: CONTOURS AND DRAINAGE:

Contours are not applicable.

In general the drainage has been delineated by stereoscopic examination of the photographs.

35: SHORELINE AND ALONGSHORE DETAILS:

The mean high-water line has been delineated as indicated by field inspection, supplemented by planetable spot locations shown on a topographic survey by the Ship PIONEER.

All alongshore details, indicated by field inspection or visible by office examination of the photographs have been detailed.

~~There were no low-water or approximate shoal lines indicated by field inspection and none were detailed from office inspection of the photographs.~~

~~Several areas, which are believed to bare during low-water stages, have been shown with an appropriate symbol.~~

Approximate low-water, shoal and shallow lines were delineated after office inspection and interpretation.

36: OFFSHORE DETAILS:

There were no offshore details indicated by field inspection and none were observed by office examination of the photographs.

37: LANDMARKS AND AIDS:

Refer to paragraph "B" of the Descriptive Report for Topographic Survey PI-B & C-50(1950) Project CS-341.

Refer to page 27, sub-heading: "Features to be Emphasized" of the Project Report "Aerial Photograph Control and Inspection North Shore Seward Peninsula, Alaska", Project Ph-46(49).

38: CONTROL FOR FUTURE SURVEYS:

Forms 524 are being submitted with this map manuscript for two recoverable topographic stations, namely: SARD and SAMP. These are also listed under side heading 49: "Notes to the Hydrographer".

39: JUNCTIONS:

Complete and satisfactory junctions have been made with adjoining map manuscripts.

40: HORIZONTAL AND VERTICAL ACCURACY:

Vertical accuracy is not applicable.

There are no areas believed to be sub-normal in horizontal accuracy.

46: COMPARISON WITH EXISTING MAPS:

A visual comparison was made with U.S.G.S. reconnaissance map of Seward Peninsula, Scale 1:500,000 edition of 1913 reprinted 1935.

47: COMPARISON WITH NAUTICAL CHARTS:

A visual comparison was made with Nautical Chart No. 9380, Scale, 1:400,000, 6th edition 1914, hand corrected No. 13, 1950.

Items to be applied to nautical charts immediately:

NONE

Approved:

*Charles W. Clark*  
Charles W. Clark  
Officer-in-Charge

Respectfully submitted:

*J. Edward Deal, Jr.*  
J. Edward Deal, Jr.  
Cartographer

48: GEOGRAPHIC NAMES LIST: T-9639

The geographic names listed below were obtained from sources as follows:

Nautical Chart No. 9380  
World Aeronautical Chart (76) Seward Peninsula  
U.S.G.S. Reconnaissance Map of Seward Peninsula

For this part of the project neither a geographic names report nor final names sheets were furnished the Photogrammetric Office.

Chukchi Sea  
Ikpek  
Ikpek Lagoon

*Names underlined in  
red are approved  
9-11-57 L. Heck*



49: NOTES FOR THE HYDROGRAPHER: T-9639

Two recoverable topographic stations have been located by radial plot as follows:

SARD, 1949  
SAMP, 1949

## PHOTOGRAMMETRIC OFFICE REVIEW

T-9639

1. Projection and grids ☒ 2. Title ☒ 3. Manuscript numbers ☒ 4. Manuscript size ☒

## CONTROL STATIONS

5. Horizontal control stations of third-order or higher accuracy ☒ 6. Recoverable horizontal stations of less than third-order accuracy (topographic stations) ☒ 7. Photo hydro stations ☒ 8. Bench marks ☒  
9. Plotting of sextant fixes ☒ 10. Photogrammetric plot report ☒ 11. Detail points ☒

## ALONGSHORE AREAS

(Nautical Chart Data)

12. Shoreline ☒ 13. Low-water line ☒ 14. Rocks, shoals, etc. ☒ 15. Bridges ☒ 16. Aids to navigation ☒ 17. Landmarks ☒ 18. Other alongshore physical features ☒ 19. Other along-shore cultural features ☒

## PHYSICAL FEATURES

20. Water features ☒ 21. Natural ground cover ☒ 22. Planetable contours ☒ 23. Stereoscopic instrument contours ☒ 24. Contours in general ☒ 25. Spot elevations ☒ 26. Other physical features ☒

## CULTURAL FEATURES

27. Roads ☒ 28. Buildings ☒ 29. Railroads ☒ 30. Other cultural features ☒

## BOUNDARIES

31. Boundary lines ☒ 32. Public land lines ☒

## MISCELLANEOUS

33. Geographic names ☒ 34. Junctions ☒ 35. Legibility of the manuscript ☒ 36. Discrepancy overlay ☒ 37. Descriptive Report ☒ 38. Field inspection photographs ☒ 39. Forms ☒  
40. Rev. H. Brown J. Edward Deal Jr.  
Reviewer Supervisor, Review Section or Unit

41. Remarks (see attached sheet)

## FIELD COMPLETION ADDITIONS AND CORRECTIONS TO THE MANUSCRIPT

42. Additions and corrections furnished by the field completion survey have been applied to the manuscript. The manuscript is now complete except as noted under item 43.

\_\_\_\_\_  
Compiler\_\_\_\_\_  
Supervisor

43. Remarks:

62. Comparison with Registered Topographic Surveys

This is the first large scale survey of this area.

63. Comparison with Maps of Other Agencies

Reconnaissance Map of SEWARD PENINSULA, USGS,  
1:500,000, 1918 Reprint 1935

TELLER, ALASKA, USGS, 1:250,000 Advance  
Proof 1951

Map of SEWARD PENINSULA, Lomen Commercial Company,  
1:500,000, no date - a source of geographic  
names.

NOME DISTRICT, Alaska Road Commission, 1:500,000,  
1923 corrected to 1943

The coastal trail indicated on the TELLER and  
NOME DISTRICT maps above was not visible on the photo-  
graphs for office compilation.

64. Comparison with Contemporary Hydrographic Surveys.

H-7846 1:20,000 1950  
Shoreline, located at intervals on the above, is in agreement  
with that compiled for T-9639.

65. Comparison with Nautical Charts

Charts	9380	1:400,000	August 1951
	9302	1:1,534,076	December 1950
	9400	1:1,587,870	November 1950

The point of land in the northern part of IKPEK  
LAGOON does not jut westerly across the 167° meridian  
on this survey as it does on Chart 9380. This is a  
change in position in longitude of approximately 3/4  
mile.

Although there are no forests in this subarctic  
tundra region, this area has a cover of mosses, lichens,  
and some thickets which during the first of the thaw in  
June and July is essentially marsh. However, only areas  
that are marsh during the entire period of the short  
summer season as determined by office interpretation  
have been so delineated.

66. Miscellaneous

(a) FIELD INFORMATION - northeastward from CAPE  
PRINCE OF WALES, field inspection and establishment  
and identification of horizontal control was accomplished  
and originally included in Ph-46(49). There was no field  
edit in this area.

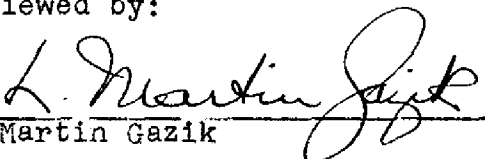
(b) POLITICAL BOUNDARIES - The Territory of Alaska is divided into four judicial divisions and these are then further subdivided into districts. All of project Ph-65(50) is within ~~the PORT CLARENCE DISTRICT~~ of the SECOND JUDICIAL DIVISION, and with the exception of T-9654 (NOME DISTRICT), all of the surveys are within the PORT CLARENCE DISTRICT.

(c) CLASSIFICATION- Geographic positions of stations in this area are "CONFIDENTIAL" and have been removed from this report. All other material of this survey has the classification "RESTRICTED".


67. Adequacy of Manuscript


This survey complies with Bureau standards, project instructions, and with National Standards of Map Accuracy.


Reviewed by:

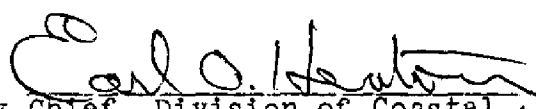
  
L. Martin Gazik

Approved by:

 1/28/1953  
Chief, Review Section  
Division of Photogrammetry

  
Chief, Nautical Chart Branch  
Division of Charts *613*

  
Chief, Division of Photogrammetry

  
Chief, Division of Coastal  
Surveys *sdH*

*Red*



SPECIAL REPORT

Ph-65(50)

Planimetric Mapping Project

Nome to Cape Prince of Wales, Bering Sea, Alaska

Correction from field (unadjusted) datum to North American 1927 was computed for T-9639 through T-9643, as these maps north of Cape Prince of Wales were radial plotted on unadjusted field datum. The correction was computed by converting the old and new positions of the latitude and longitude of the reference station for each map, and was recorded to the nearest one-tenth of a meter, on each registered clothbacked map and its manuscript near the title block, and in each descriptive report near the datum note on page T-1, with the following stamp:

The difference between Unadjusted Datum  
and N.A. 1927 Datum is Lat. plus/minus 1.4 m.  
and Long. plus/minus 0.9 m.

However, as the title block of each registered map contained the note, "1927 North American Datum", it was necessary to stamp the word "(Unadjusted)" beside this datum note in the title block of these registered maps.

No correction was necessary for maps T-9644 through T-9654, as they were radial plotted on adjusted N. A. 1927 Datum. Each report lists the name of the Reference Station on that map, but as this area was Classified during review, the positions of these stations are not shown. Since registration, it has been Declassified.

See the Special Report filed with the Completion Report of this project for more details and a project index showing the correction for each map.